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EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 59042460
PUBLICATION DATE : 09-03-84

APPLICATION DATE : 01-09-82
APPLICATION NUMBER : 57150690

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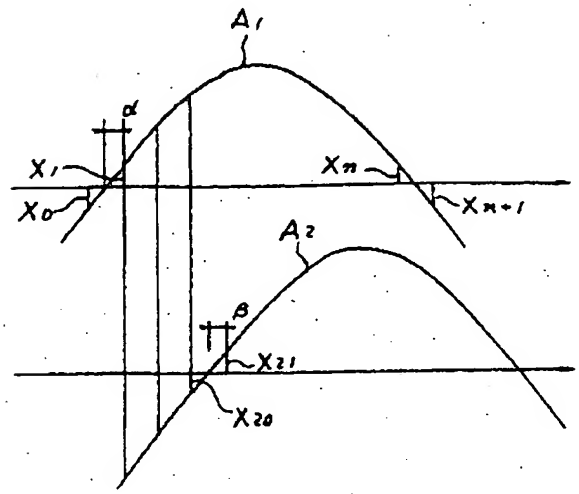
INT.CL. : G01R 25/00

TITLE : PHASE DETECTING DEVICE



$$\alpha = \theta \times \frac{|X_1|}{|X_0| + |X_1|} \qquad \beta = \theta \times \frac{|X_{21}|}{|X_{20}| + |X_{21}|}$$

ABSTRACT : PURPOSE: To detect a phase difference with high accuracy, by sampling two AC inputs from the same electric power source system, and using sampling values before and after zero-crossing of the AC inputs and a phase difference between each sampling.

CONSTITUTION: Two AC inputs inputted from the same electric power source system are sampled by a prescribed sampling frequency, and are converted to digital values. A negative sampling value X_0 and a positive sampling value X_1 in case when the input A_1 is changed to positive from negative for to its polarity are derived, and in the same way, a negative sampling value X_{20} and a positive sampling value X_{21} of the input A_2 are derived. Subsequently, a sampling number N_0 extending from the sampling value X_1 of the input A_1 to the negative sampling value X_{20} of the input A_2 is counted. Subsequently, a phase difference θ between each sampling in the actual power supply frequency is derived, phase difference α, β are derived by use of the sampling values X_0, X_1, X_{20} and X_{21} and the phase difference θ; the phase difference between two inputs is detected.